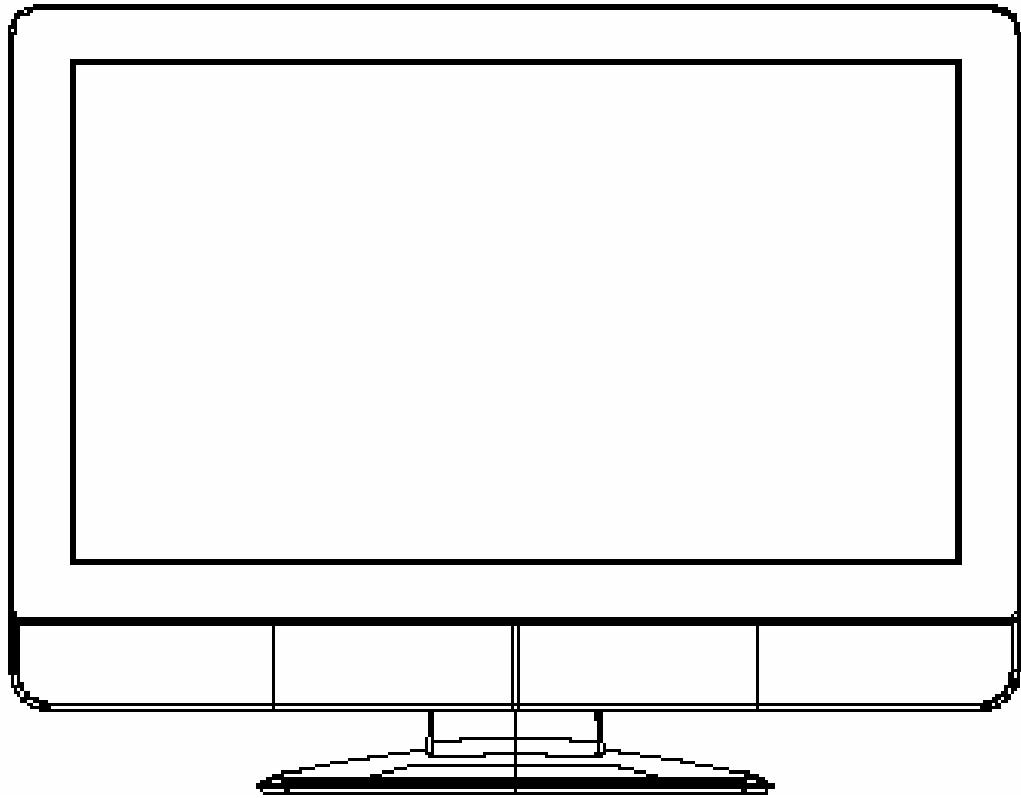


# Service Manual



**Model #: VIZIO VECO320L1A  
AUO-T315XW02**

V, Inc  
320A Kalmus Drive Costa Mesa, CA 92626  
TEL : +714-668-0588 FAX :+714-668-9099

*Top Confidential*

## Table of Contents

CONTENTS	PAGE
<i>Sections</i>	
1. Features	1-1
2. Specifications	2-1
3. On Screen Display	3-1
4. Factory Preset Timings	4-1
5. Pin Assignment	5-1
6. Main Board I/O Connections	6-1
7. Theory of Circuit Operation	7-1
8. Waveforms	8-1
9. Trouble Shooting	9-1
10. Block Diagram	10-1
11. Spare parts list	11-1
12. Complete Parts List	12-1

## *Appendix*

1. Main Board Circuit Diagram
2. Main Board PCB Layout
3. Assembly Explosion Drawing

Block Diagram

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#### **FCC INFORMATION**

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause unacceptable interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures -- reorient or relocate the receiving antenna; increase the separation between equipment and receiver; or connect the into an outlet on a circuit different from that to which the receiver is connected.

#### **FCC WARNING**

To assure continued FCC compliance, the user must use a grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. Also, any unauthorized changes or modifications to Amtrak products will void the user's authority to operate this device. Thus VINC Will not be held responsible for the product and its safety.

#### **CE CERTIFICATION**

This device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility."

#### **SAFETY CAUTION**

Use a power cable that is properly grounded. Always use the AC cords as follows – USA (UL); Canada (CSA); Germany (VDE); Switzerland (SEV); Britain (BASEC/BS); Japan (Electric Appliance Control Act); or an AC cord that meets the local safety standards.

# Chapter 1     Features

---

1. Built in TV channel selector for TV viewing.
2. Simulatnueous display of PC and TV images.
3. Connectable to PC's analog RGB port.
4. Built in S-video, HDTV, composite video, HDMI and TV out.
5. Built in auto adjust function for automatic adjument of screen display.
6. Smoothing function enables display of smooth texts and graphics even if image withresolution lower than 1366x768 is magnified.
7. Advanced video functions for personal favor.
8. Power saving to reduce consumption power too less than 1 W.
9. On Screen Display: user can define display mode (i.e. color, brightness, contrast, sharpness, backlight), sound setting, TV channel program, aspect and gamma or reset all setting.

# Chapter 2 Specification

---

## 1. TFT-LCD CHARACTERISTICS

Model Name: T315XW02\_VQ

Display Size: 31.51 inches

Outline Dimension: 760.0 mm(H) x 450.0 mm(V) x 45.0 mm(D) (Typ.)

Pixel Pitch: 0.5107 mm(H) x 0.5107 mm(V)

Pixel Format: 1366 horiz. By 768 vert. Pixels RGB strip arrangement

Display Operating Mode: Transmissive mode, normally Black

Surface Treatment: Hard Coating (3H) ,Anti-glare treatment of the front polarizer.

## 2. TFT-LCD OPTICAL CHARACTERISTICS

Contrast ratio: 2500 :1(Typ)

Surface Luminance, White: 450 cd/m<sup>2</sup> (Typ)

Luminance Variation,  $\delta = 1.3$  (Max)

Response Time = 6.5 ms (Typ) , (Max=25ms)

Viewing Angle (CR>10)

Left: 89°typ.

Right: 89°typ.

Top: 89°typ.

Bottom: 89°typ.

## 3. Input Connectors

1 x RF (F connector for internal NTSC/ATSC/ QAM Hybrid Tuner x 1)

2 x HDMI(v1.3) with HDCP plus Stereo Audio

2 x Component Y/Pb/Pr plus Stereo Audio

1 x Composite Video/ 1x S-Video plus Stereo Audio

1 x Analog RGB plus Stereo Audio

## 4. POWER SUPPLY

Input Voltage Level: 120 Vac, 50/ 60 Hz

Power Consumption: 121W MAXPower OFF: to less than 1W MAX

---

## 5. Speaker

Output 10W (max) X2

## 6. ENVIRONMENT

Operating Temperature: 0c~50c (Ambient)

Operating Humidity: Ta= 39 °C, 90%RH (Non-condensing)

Operating Altitude: 0 - 14,000 feet (4267.2m)(Non-Operating)

## 7. DIMENSIONS (Physical dimension)

Width: 895mm. +/- 10 mm

Depth: 225mm +/- 10 mm

Height: 710mm +/- 10 mm

## 8. WEIGHT (Physical weight)

a. Net: 14 kg

b. Gross: 18 kg

### Precaution

Please pay attention to the followings when you use this TFT LCD module.

### 1. OPERATING PRECAUTIONS

- (1) The device listed in the product specification sheets was designed and manufactured for TV application
- (2) The spike noise causes the mis-operation of circuits. It should be lower than following voltage:  $V=\pm 200mV$  (Over and under shoot voltage)
- (3) Response time depends on the temperature. (In lower temperature, it becomes longer..)
- (4) Brightness depends on the temperature. (In lower temperature, it becomes lower.) And in lower temperature, response time (required time that brightness is stable after turned on) becomes longer.
- (5) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.

---

- (6) When fixed patterns are displayed for a long time, remnant image is likely to occur.
- (7) Module has high frequency circuits. Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding methods may be important to minimize the interface.

## **2. HANDLING PRECAUTIONS FOR PROTECTION**

- (1) The protection film is attached to the bezel with a small masking tape. When the protection film is peeled off, static electricity is generated between the film and polarizer. This should be peeled off slowly and carefully by people who are electrically grounded and with well ion-blown equipment or in such a condition, etc.
- (2) When the module with protection film attached is stored for a long time, sometimes there remains a very small amount of glue still on the bezel after the protection film is peeled off.
- (3) You can remove the glue easily. When the glue remains on the bezel surface or its vestige is recognized, please wipe them off with absorbent cotton waste or other soft material like chamois soaked with normal-hexane.

# Chapter 3 On Screen Display

On Screen Display (OSD) is a friendly interface providing the function adjusting in our system. Customers could operate it only by few buttons. There is the introduction of the OSD.

## Main unit button

MENU	OK
CH +	↑
CH -	↓
VOL +	←
VOL -	→
Input	

## [MENU]

“MENU” button could start the OSD which could adjust the performance and set up the setting between the different input sources. There are the structures.

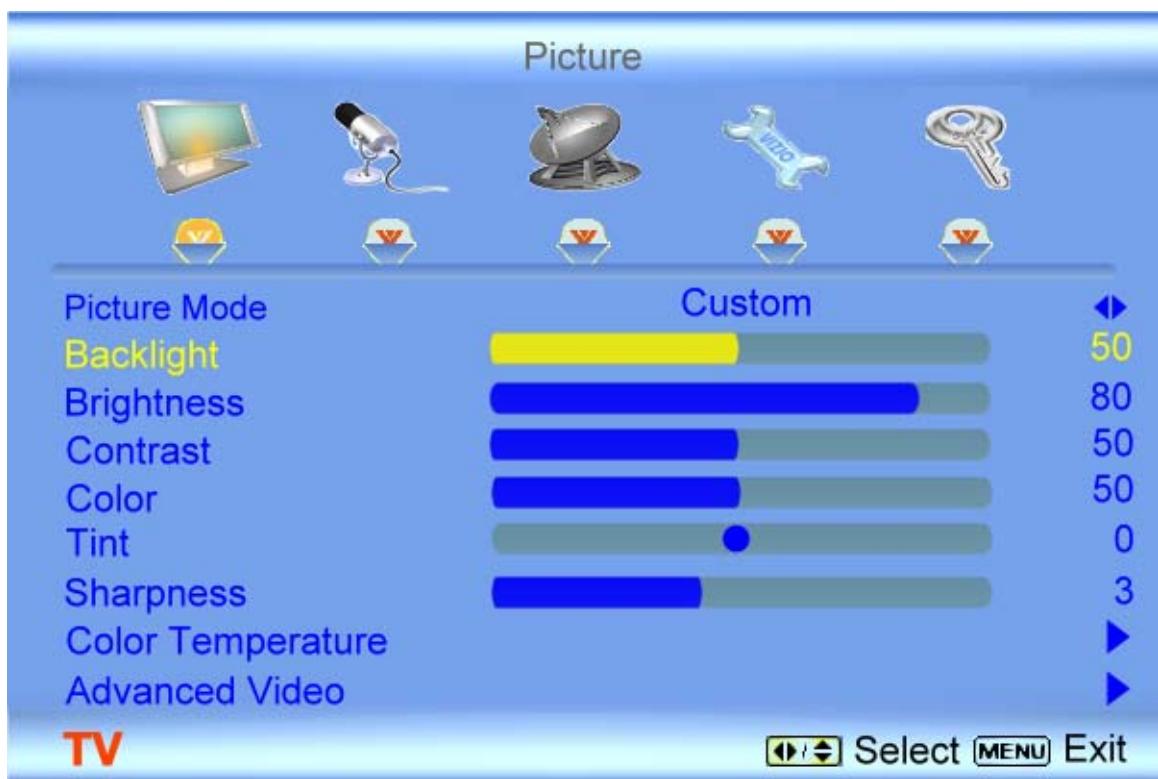
## [Initial Setup]



---

## TV Source

- A. Picture : (Bold: Default)
  - a. Picture Mode (Standard / Movie / Game / Custom)
  - b. Backlight (0~100, 90)
  - c. Brightness (0~100, 50)
  - d. Contrast (0~100, 50)
  - e. Color (saturation)(0~100, 50)
  - f. Tint (hue) (-32~32, 0)
  - g. Sharpness (0~7, 4)
  - h. Color Temperature (CUSTOM/COOL/COMPUTER/NORMAL)
  - i. Advanced Video
    - 1. DNR (Low/Medium/Strong/Off)
    - 2. Black level extender (Off/On)
    - 3. White Peak Limiter (On/Off)
    - 4. CTI (Low/Medium/Strong/Off)
    - 5. Flesh Tone (Off/On)
    - 6. Adaptive Luma (Off/On)
    - 7. DCR (Off/On)



---

B. Audio : (Bold: Default)

- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. SRS TSXT(ON/OFF)
- f. Digital Audio Out (PCM/OFF/Dolby Digital)
- g. Speaker (ON/OFF)
- h. Lip Sync (0~5 , 0)



---

C. TV : (Bold: Default)

- a. Tuner Mode (Cable/Antenna)
- b. Auto Search
- c. Skip Channel
- d. MTS (Stereo/SAP/Mono)
- e. Time Zone( Eastern, Atlantic, Indiana, Central, Mountain, Arizona, Newfoundland, Pacific, Alaska, Hawaii)
- f. Daylight Saving (ON/OFF)



---

D. Setup : (Bold: Default)

- a. Language (English/ Français / Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. Wide (Wide/Panoramic/Normal/Stretch)
- d. Input Naming (AV /COMPONENT1/COMPONENT2/RGB/HDMI1/HDMI2)
- e. CC (OFF/CC1~4)
- f. Digital CC Style
- g. H/V Position
- h. Reset All Setting



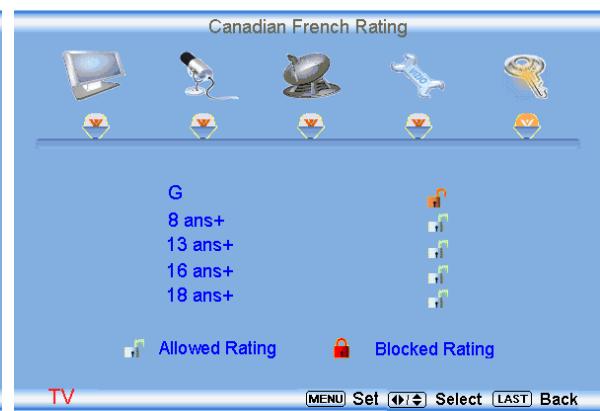
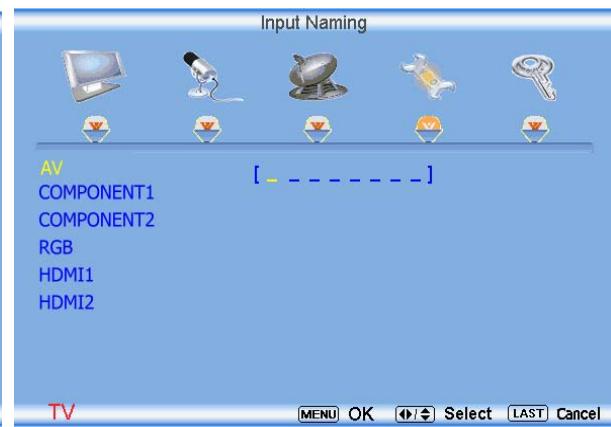
E. Parental : (Bold: Default)



Password (Default => 0000)

- a. Cannel Block
- b. US TV Rating
- c. US Movie Rating
- d. Canadian English Rating
- e. Canadian French Rating
- f. DTV Rating
- g. Block TV Unrated (NO/Yes)
- h. Access Code Edit

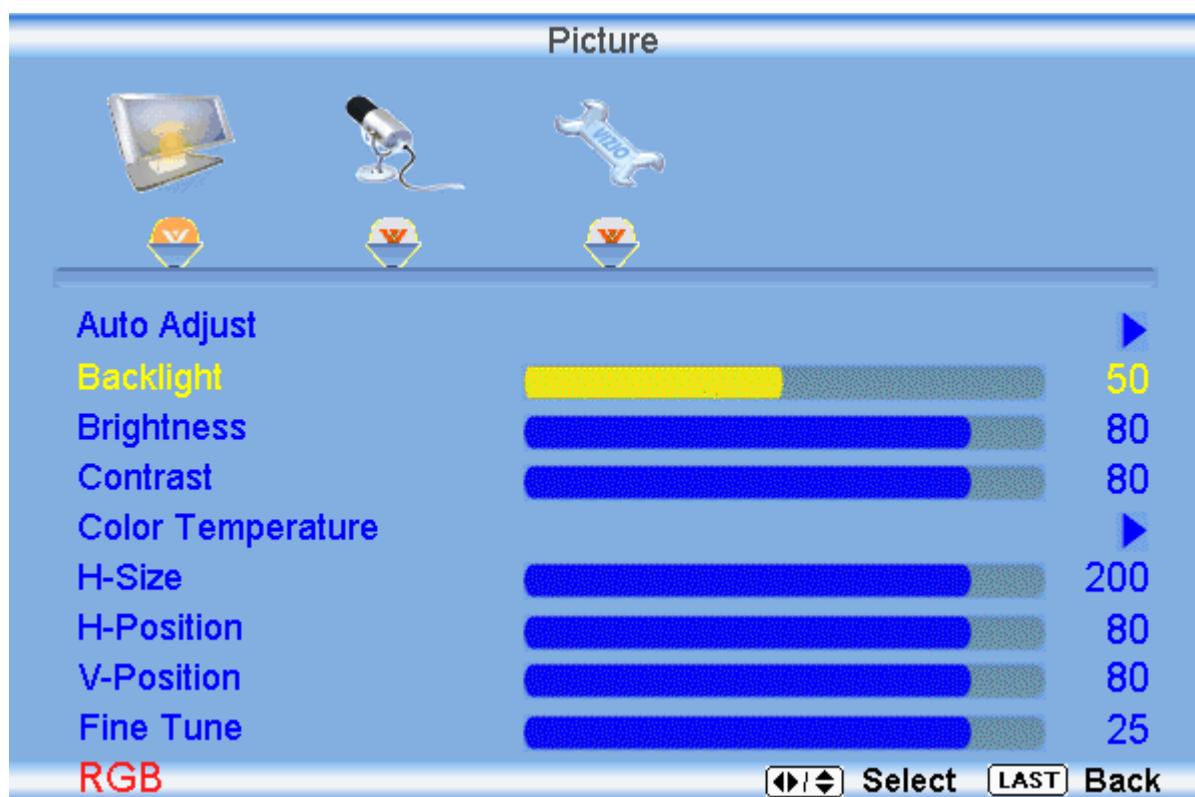




## RGB Mode

A. Picture Adjust : (Bold: Default)

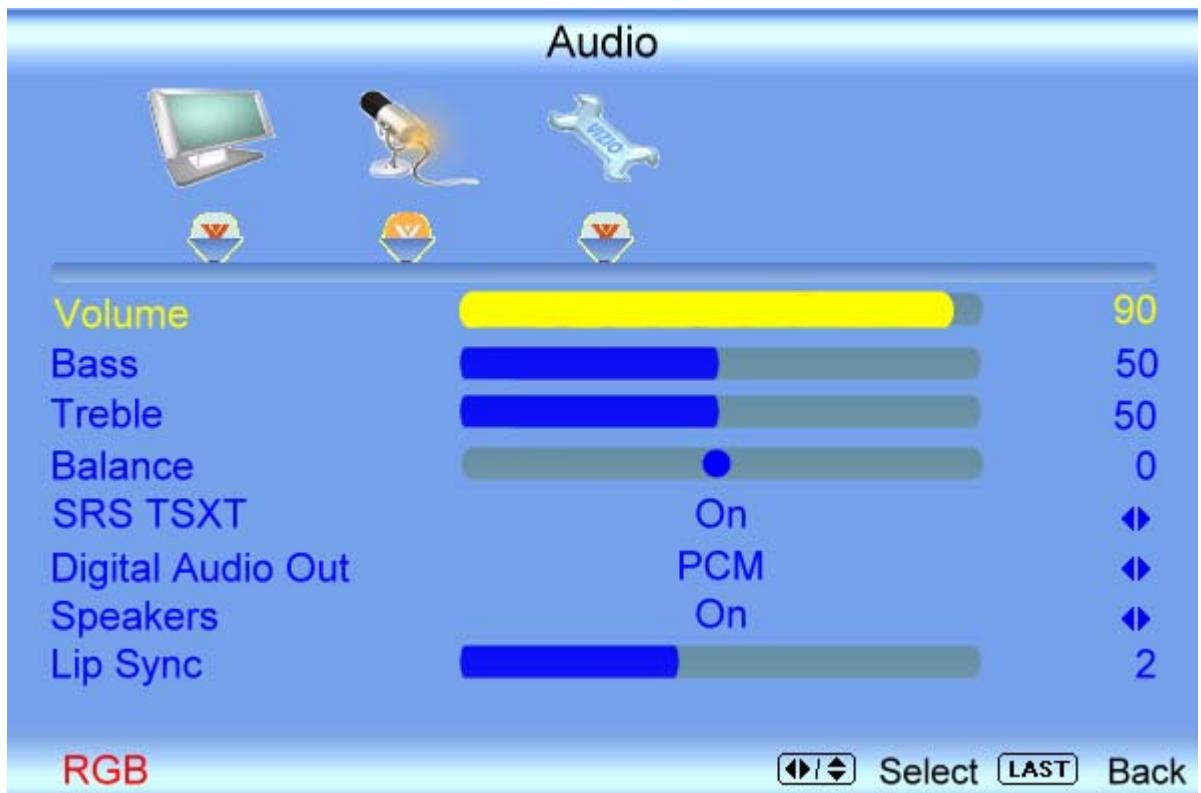
- a. Auto Adjust
- b. Backlight (0~100, 90)
- c. Brightness (0~100, 50)
- d. Contrast (0~100, 50)
- e. Color Temperature (9300/Custom/6500)
- f. H-Size (0~255, 127)
- g. H-Position (0~100, 48)
- h. V-Position (0~100, 47)
- i. Fine Tune (0~31, 29)



---

B. Audio : (Bold: Default)

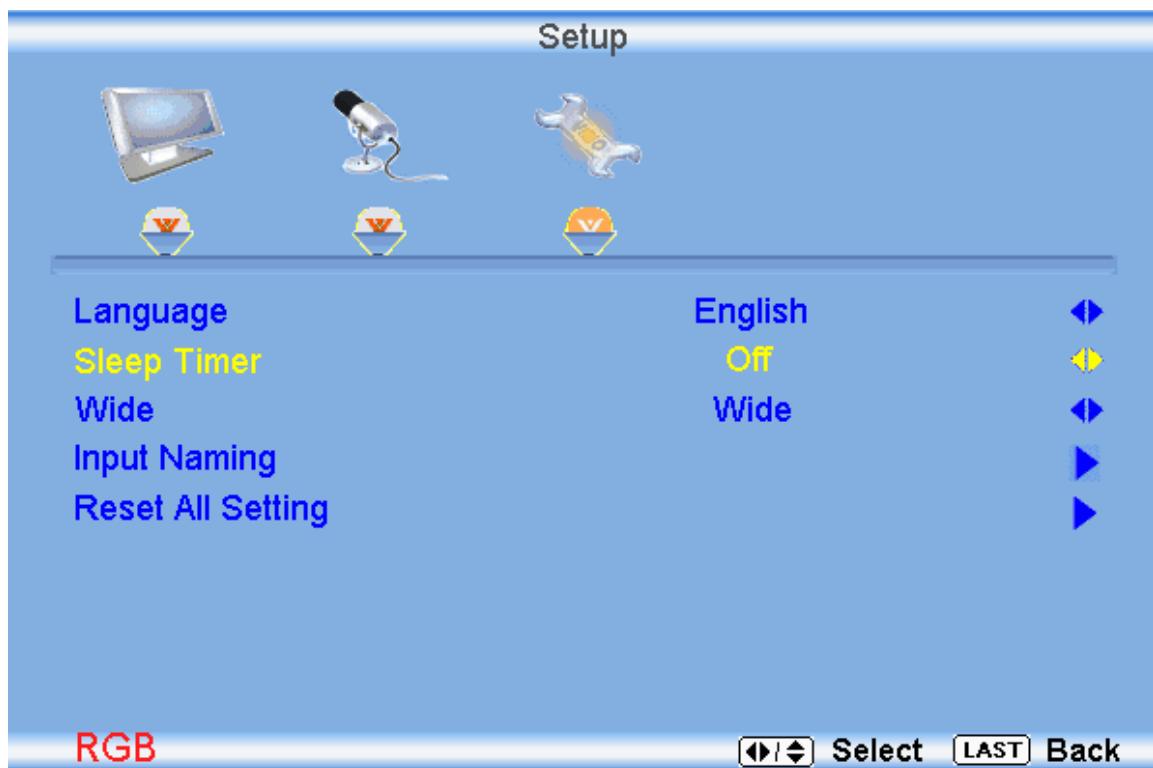
- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. SRS TSXT(ON/OFF)
- f. Digital Audio Out(PCM/OFF/Dolby Digital)
- g. Speakers (ON/OFF)
- h. Lip Sync (0~5 , 0)



---

C. Setup : (Bold: Default)

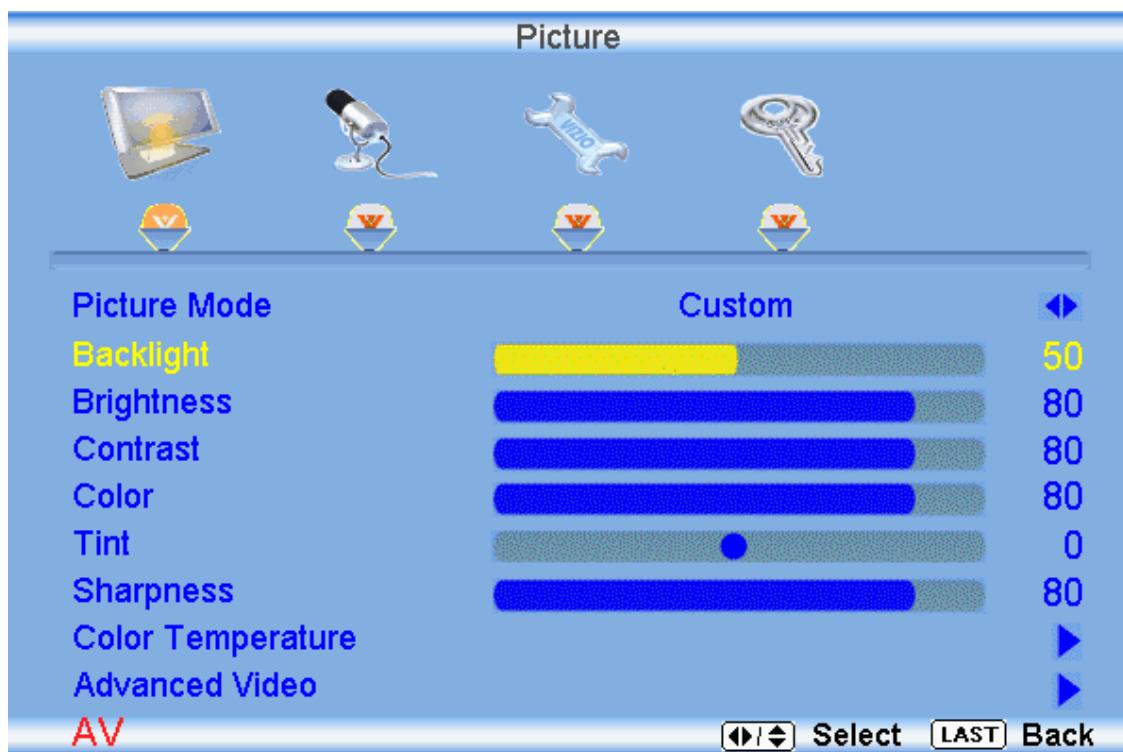
- a. Language (English/ Français / Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. Wide (Wide/Normal/Stretch)
- d. Input naming (AV/COMPONENT1/COMPONENT2/HDMI1/HDMI2)
- e. Rest All Setting (OK/Cancel)



## AV / COMPONENT MODE

A. Picture : (Bold: Default)

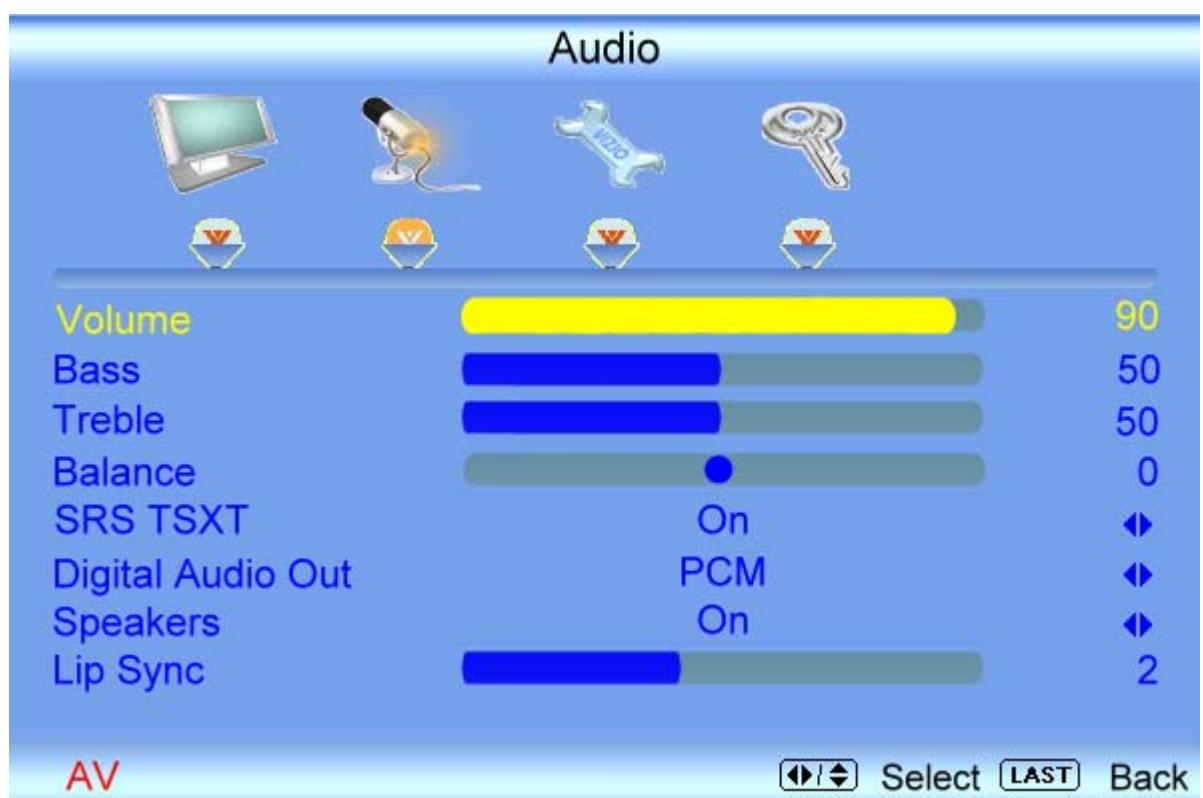
- a. Picture Mode (Custom/Standard/Movie /Game / Custom)
- b. Backlight (0~100, 90)
- c. Brightness (0~100, 50)
- d. Contrast (0~100, 50)
- e. Color (saturation)(0~100, 50)
- f. Tint (hue) (-32~32, 0)
- g. Sharpness (0~7, 4)
- h. Color Temperature (CUSTOM/COOL/COMPUTER/NORMAL)
- i. Advanced Video
  - 1. DNR (Low/Medium/Strong/Off)
  - 2. Black level extender (Off/On)
  - 3. White Peak Limiter (On/Off)
  - 4. CTI (Low/Medium/Strong/Off)
  - 5. Flesh Tone (Off/On)
  - 6. Adaptive Luma (Off/On)
  - 7. DCR (Off/On)



---

B. Audio : (Bold: Default)

- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. SRS TSXT(ON/OFF)
- f. Digital Audio Out (PCM/OFF/Dolby Digital)
- g. Speakers (ON/OFF)
- h. Lip Sync (0~5)



---

C. Setup : (Bold: Default)

- a. Language (English/ Français / Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. Wide (Wide/Normal)
- d. Input Naming (AV/COMPONENT1/COMPONENT2/HDMI1/HDMI2)
- e. CC(OFF/CC1-4)
- f. H/V Position
- g. Reset All Setting (OK/Cancel)



---

D. Parental : (Bold: Default)

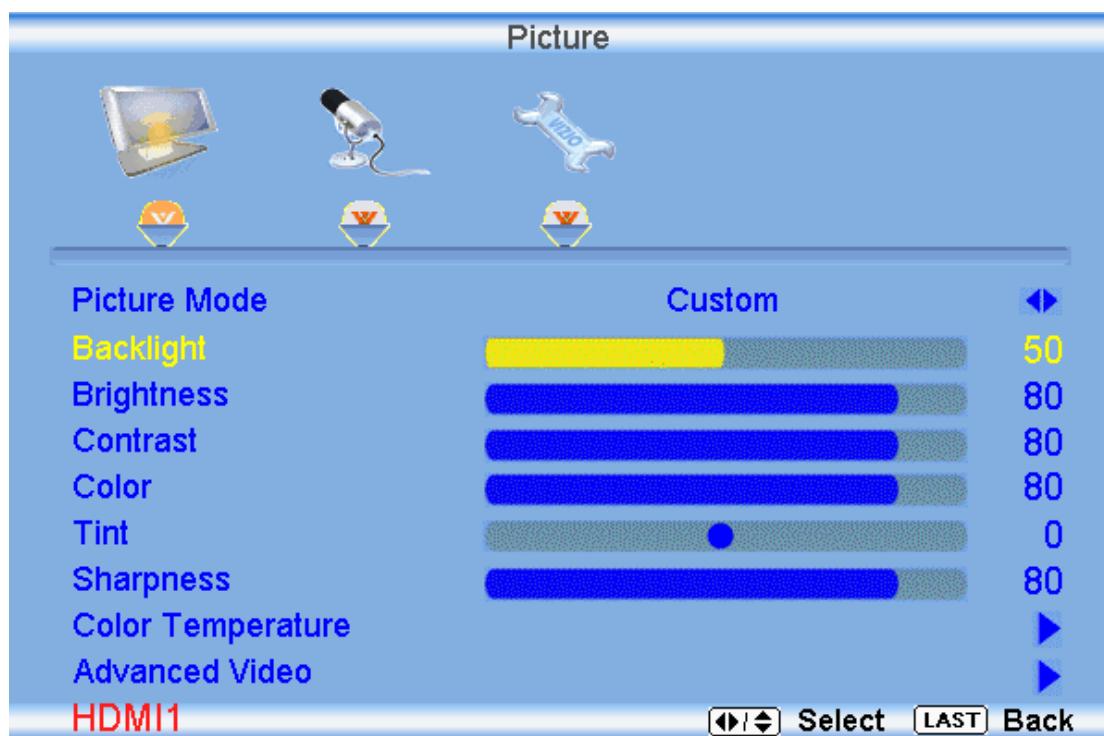
- Password (Default => 0000)
- a. Cannel Block
- b. US TV Rating
- c. US Movie Rating
- d. Canadian English Rating
- e. Canadian French Rating
- f. DTV Rating
- g. Block TV Unrated (NO/Yes)
- h. Access Code Edit



## HDMI MODE

A. Picture : (Bold: Default)

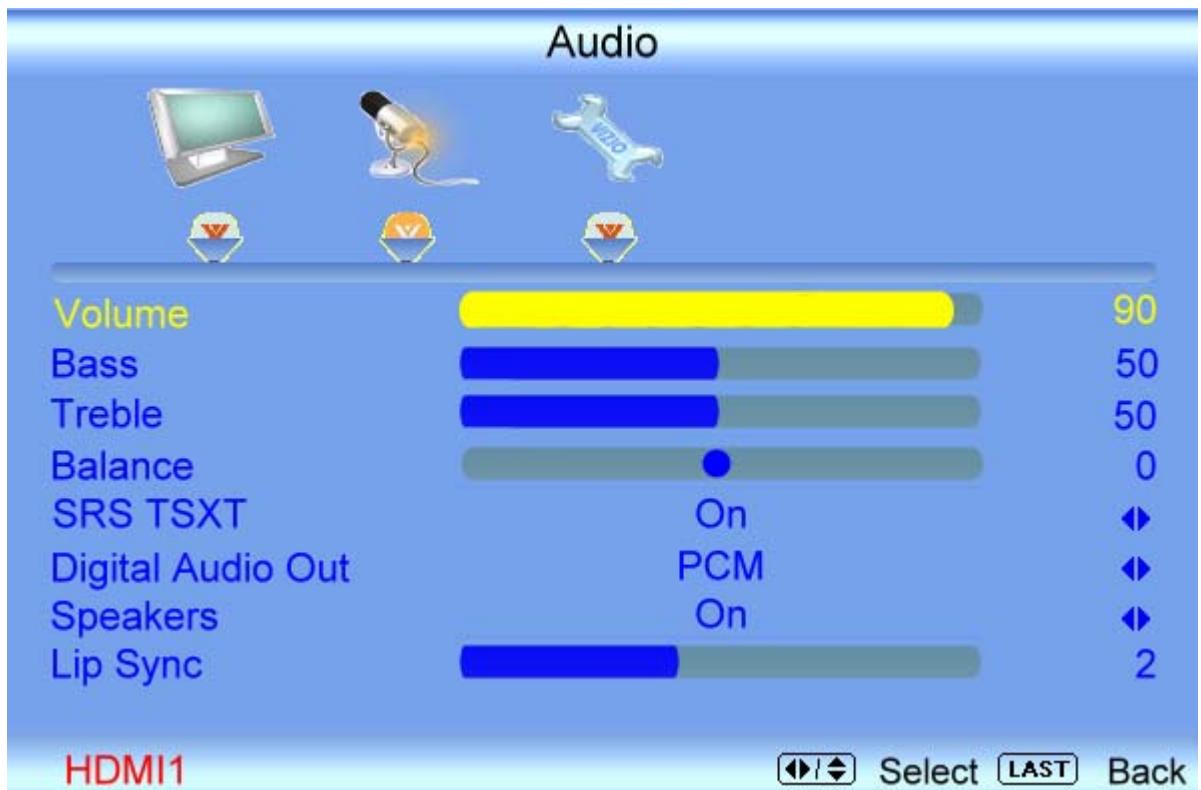
- a. Picture Mode (Custom/Movie/Game/Standard Custom)
- b. Backlight (0~100, 90)
- c. Brightness (0~100, 50)
- d. Contrast (0~100, 50)
- e. Color (saturation)(0~100, 50)
- f. Tint (hue) (-32~32, 0)
- g. Sharpness (0~7, 4)
- h. Color Temperature (CUSTOM/COOL/COMPUTER/NORMAL)
- i. Advanced Video
  - 1. DNR (Low/Medium/Strong/Off)
  - 2. Black level extender (Off/On)
  - 3. White Peak Limiter (On/Off)
  - 4. CTI (Low/Medium/Strong/Off)
  - 5. Flesh Tone (Off/On)
  - 6. Adaptive Luma (Off/On)
  - 7. DCR (Off/On)



---

B. Audio : (Bold: Default)

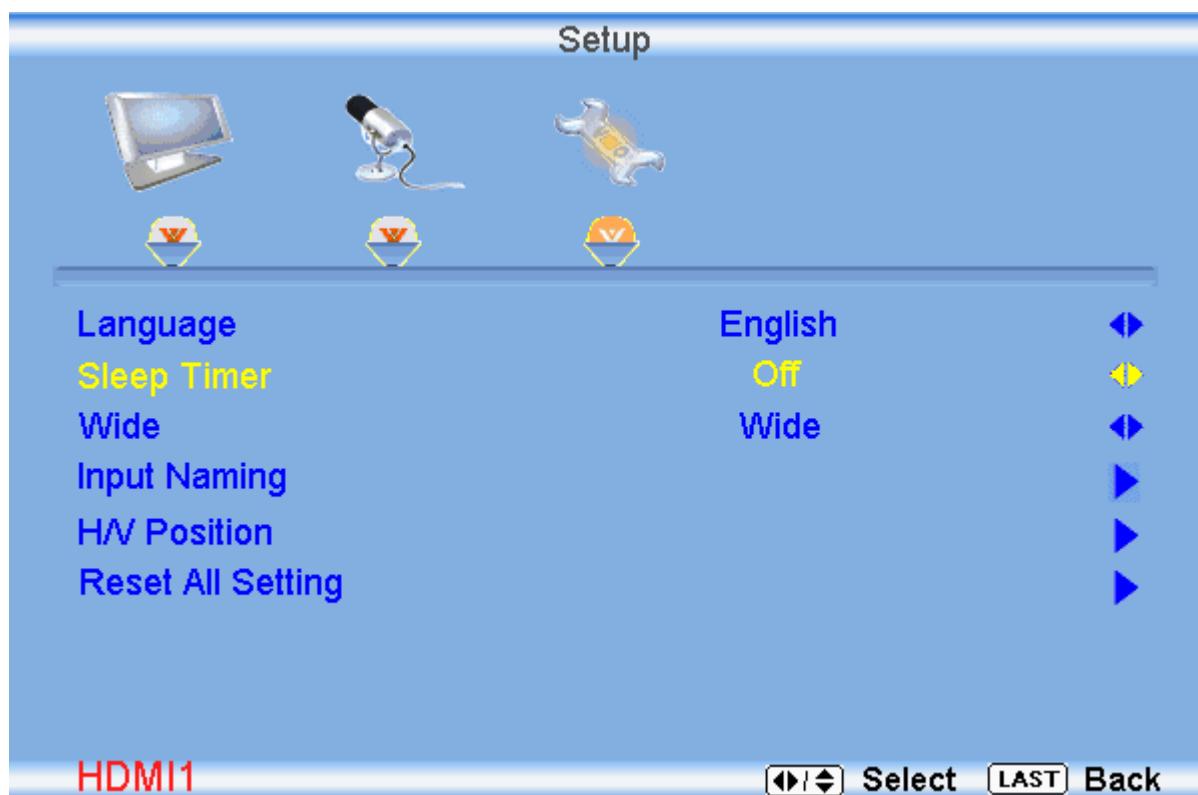
- a. Volume (0~100, 25)
- b. Bass (0~100, 50)
- c. Treble (0~100, 50)
- d. Balance (-50~50, 0)
- e. SRS TSXT(ON/OFF)
- f. Digital Audio Out
- g. Speakers (ON/OFF)
- h. Lin Sync (0~5 , 0)



---

C. Setup :

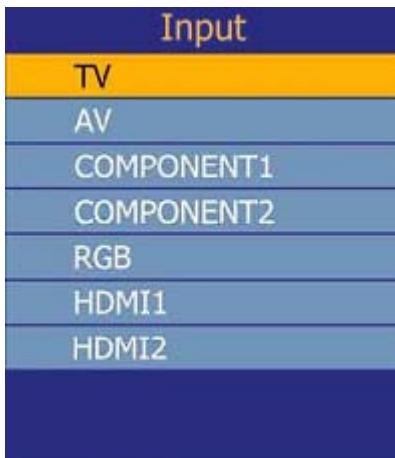
- a. Language (English/ Français / Español)
- b. Sleep Timer (OFF/30Min/60Min/90Min/120Min)
- c. Wide (Wide/Normal/Stretch)
- d. Input Naming (AV/COMPONENT1/COMPONENT2/HDMI1/HDMI2)
- e. H/V Position
- f. Rest All Setting (OK/Cancel)



---

## [INPUT]

“INPUT” could supply an interface providing a list. The list shows input sources and provides the choices of different sources. The list includes items as below:



- A. TV: Analog TV or digital TV
- B. AV: Composite (AV) & S-Video signal
- C. Component1, Component2: Color difference (YPbPr) video signals.
- D. RGB: Video Graphics Array (VGA) or D-sub video signals.
- E. HDMI1, HDMI2: High Definition Multimedia Interface (HDMI) multimedia signals.

## [INFO]

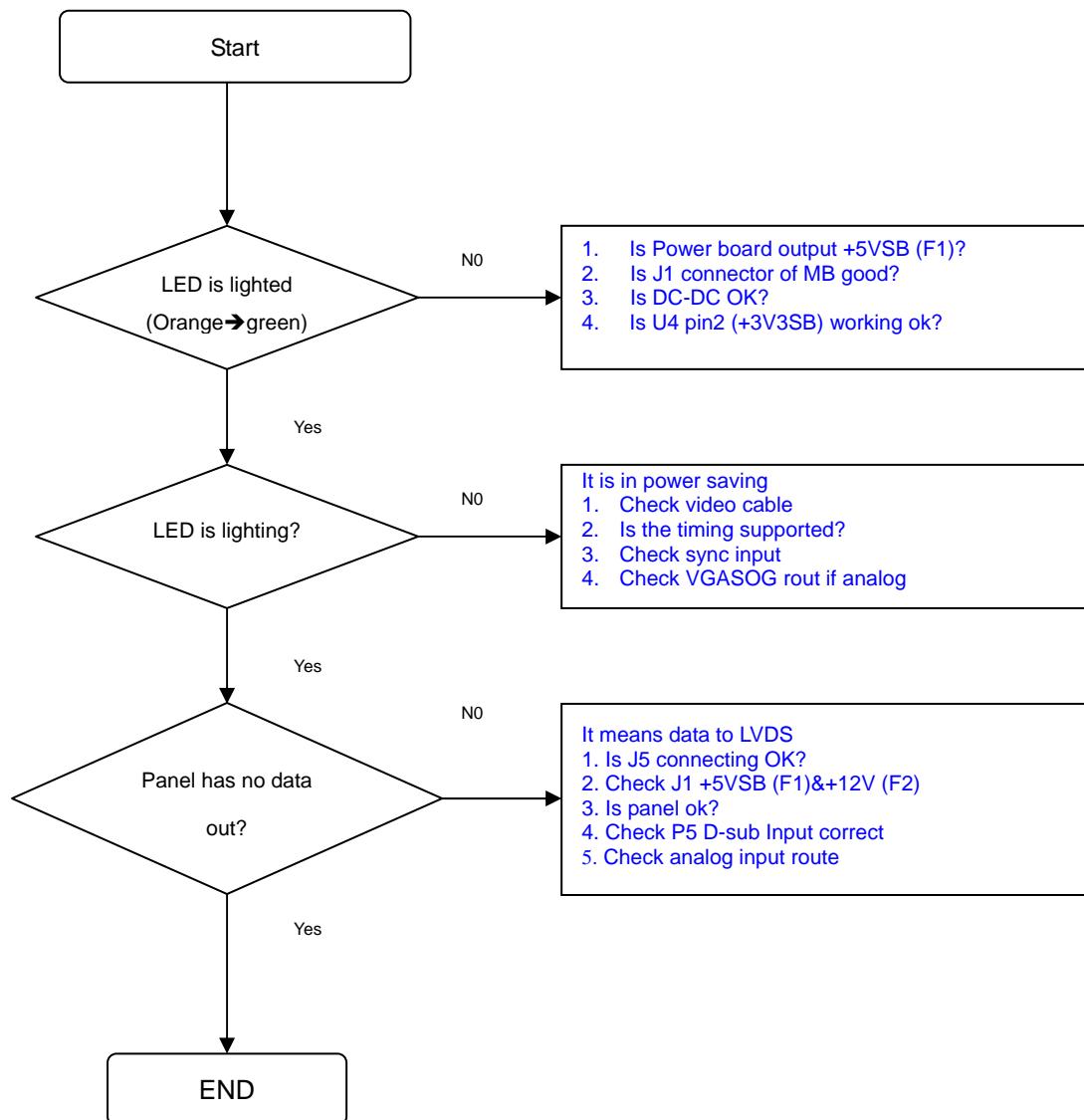
“INFO” button could show an information bar which displays the information about the input signal on our LCD TV.



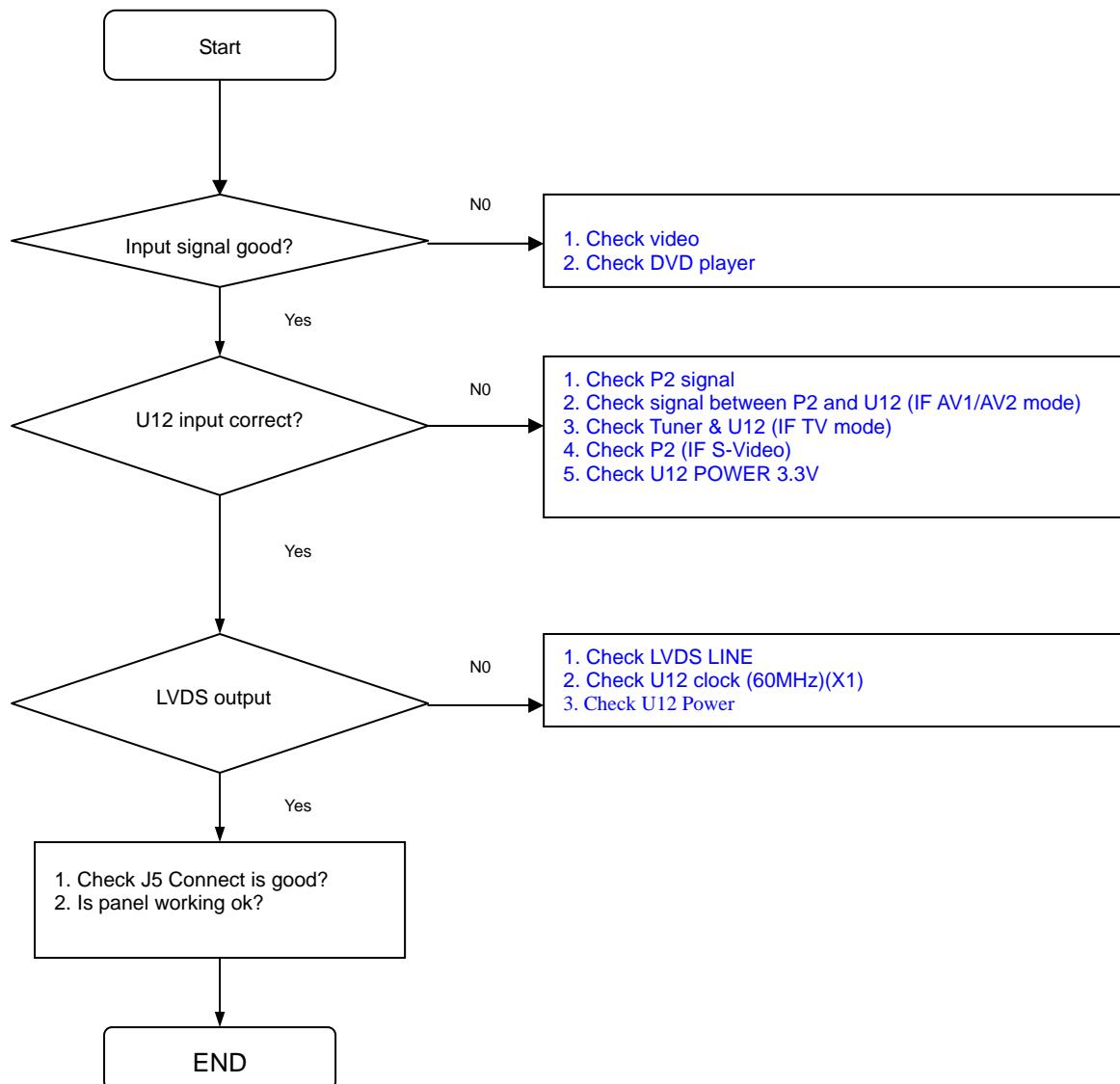
# Chapter 9    Trouble shooting

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## MONITOR DISPLAY NOTHING (PC MODE)

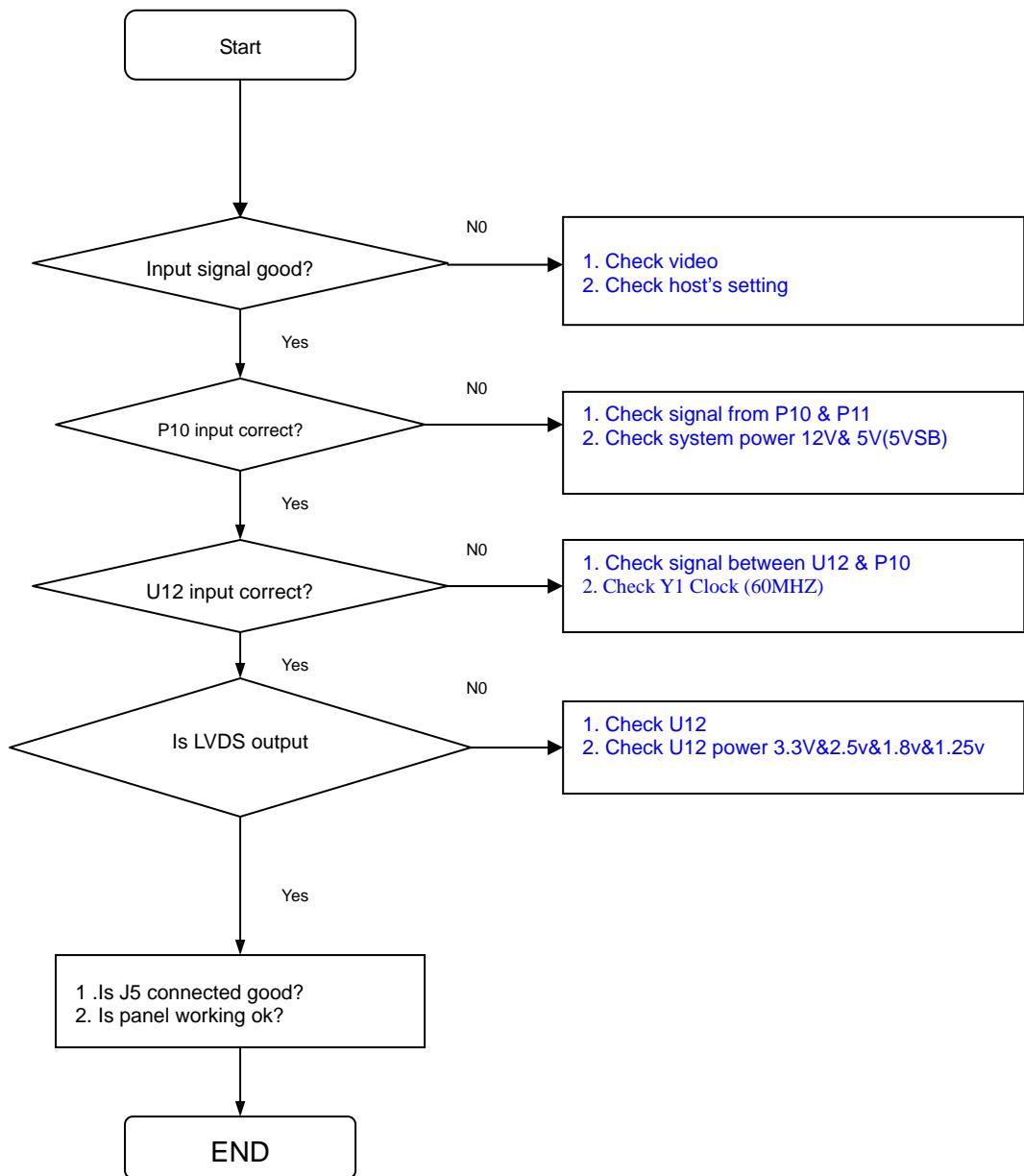


(TV, COMPOSITE VIDEO1, 2, S-VIDEO) IS NOT DISPLAY CORRECTLY



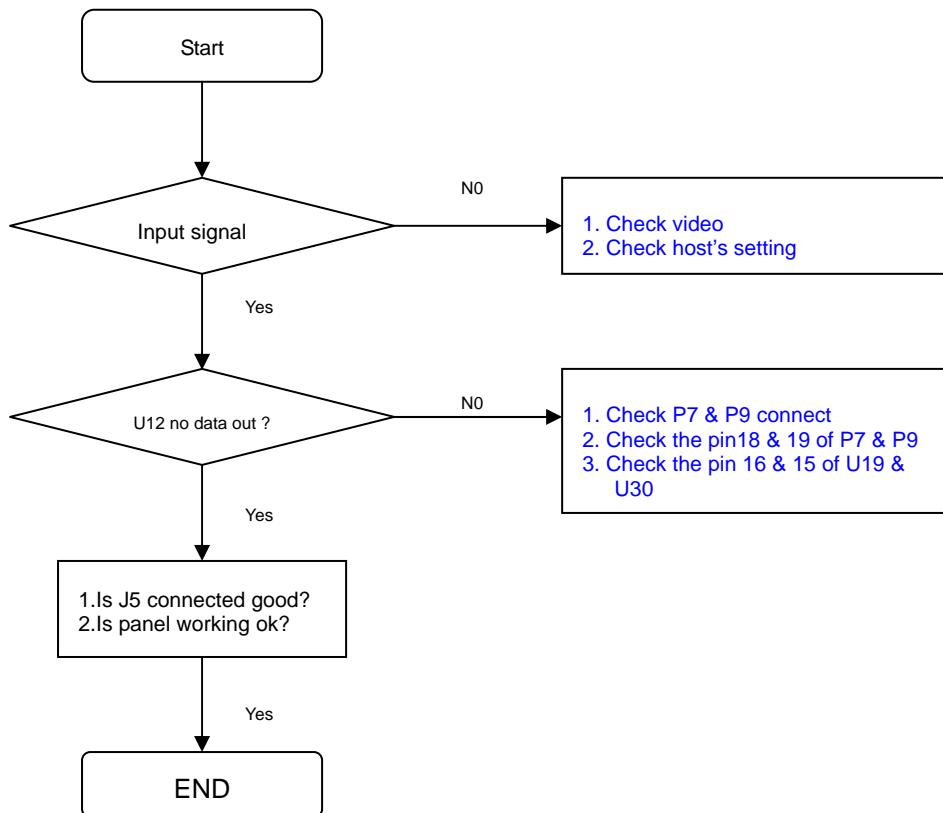
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(COMPONENT1, 2) IS NOT DISPLAY CORRECTLY

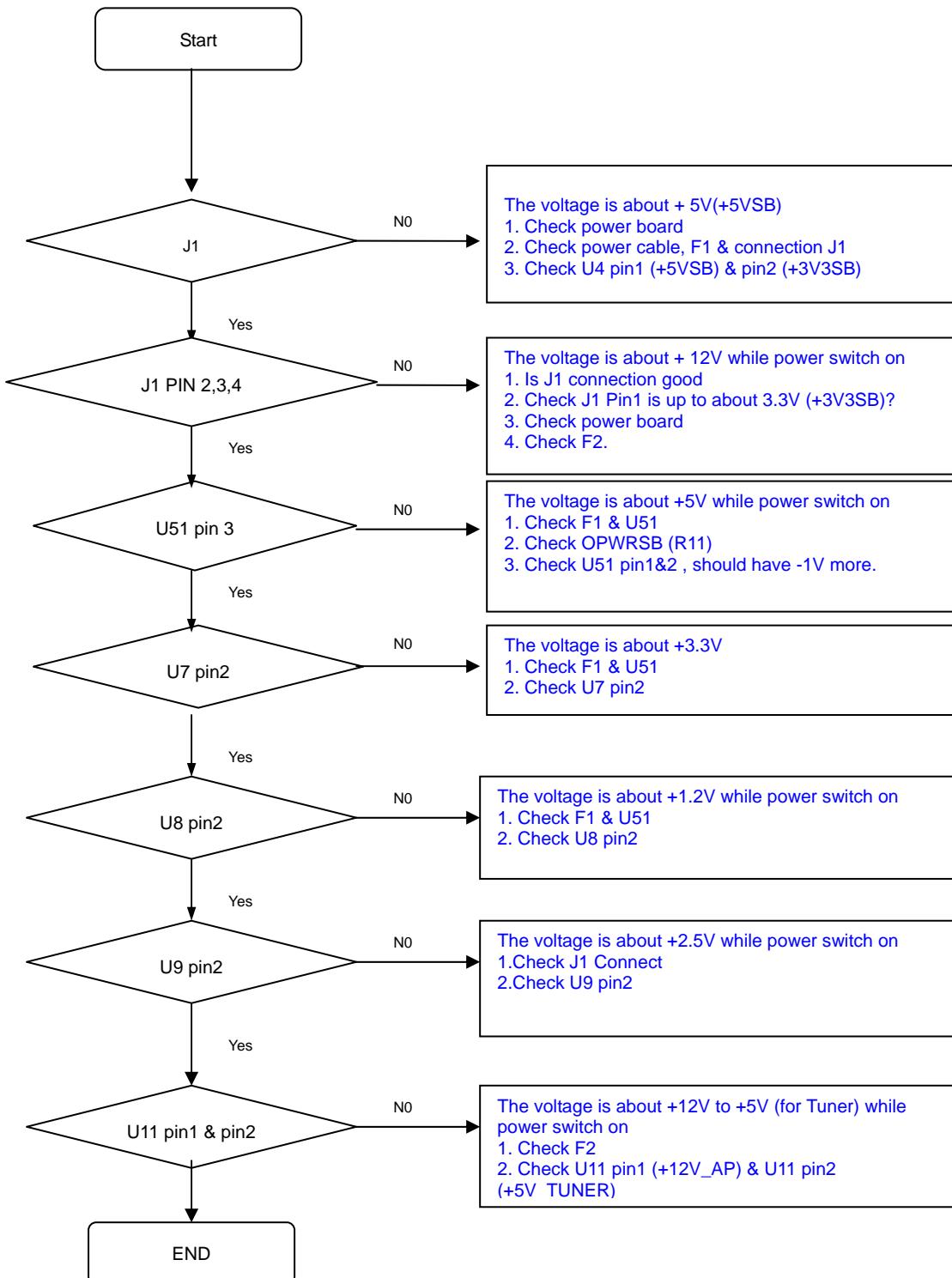


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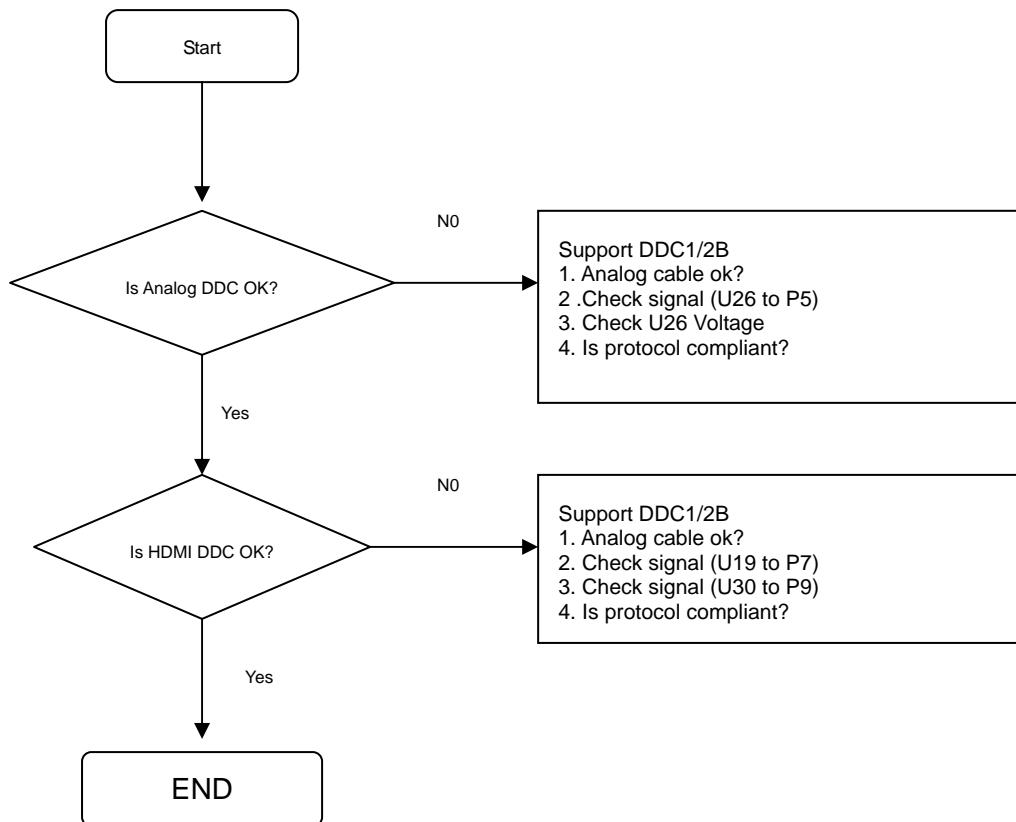
## (HDMI) IS NOT DISPLAY CORRECTLY



## TROUBLE OF DC-DC CONVERTER



## TROUBLE OF EDID READING

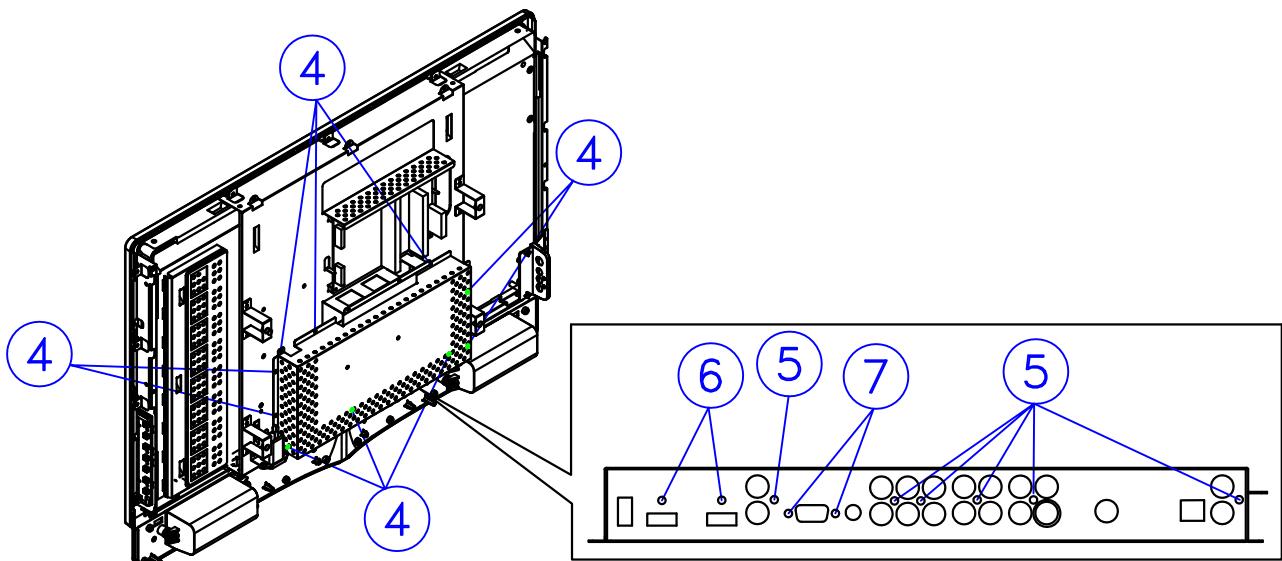
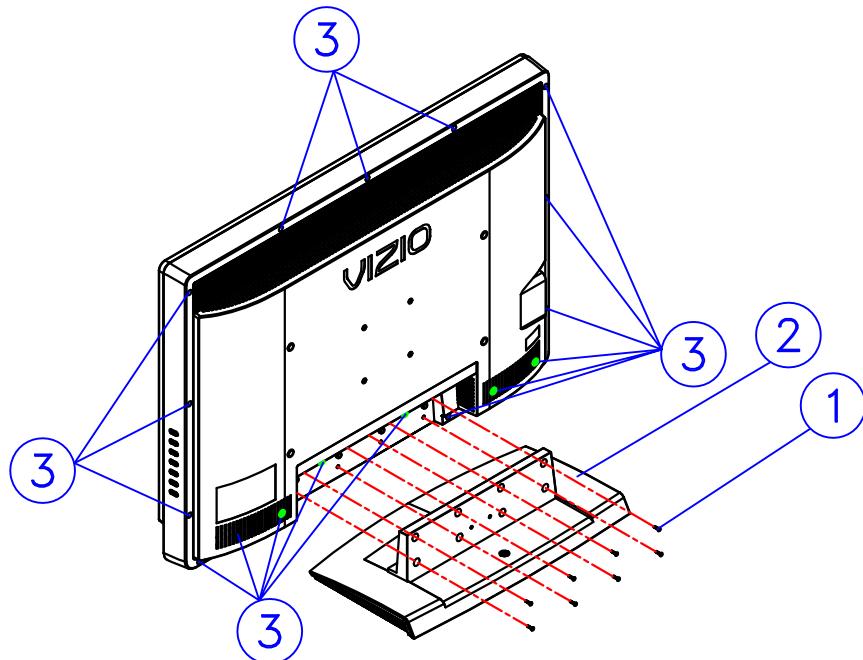


## DISASSEMBLY INSTRUCTIONS

### 1. REAR COVER ASS'Y REMOVAL

*Note: Spread a mat underneath to avoid damaging the TV surface.*

- 1) Remove eight screws ① from Base Ass'y ② .
- 2) Separate the Base Ass'y ② .
- 3) Remove seventeen screws ③ from rear cover.
- 4) Separate the rear cover.
- 5) Remove ten screws ④ from Main shielding.
- 6) Remove six screws ⑤, two screws ⑥, and two hexagon screws ⑦ from Main Shielding.
- 7) Separate the Main Shielding.



## 2. POWER BD ASS'Y REMOVAL

- 1) Remove the connector ⑧(CN4) of the inverter cable.
- 2) Remove the connector ⑨(CN3) of the power cable.
- 3) Remove the connector ⑩(CN1) of the power cable 1.
- 4) Remove four screws ⑪ from Power BD ASS'Y .
- 5) Separate the Power BD ASS'Y .

## 3. MAIN BD ASS'Y REMOVAL

- 2) Remove the connector ⑫(J6) of the speaker cable.
- 3) Remove the connector ⑬(J1) of the Power cable.
- 4) Remove the connector ⑭(J7) of the LVDS cable.
- 5) Remove the connector ⑮(J2) of the Display cable.
- 6) Remove two screws ⑯ from Heat sink.
- 7) Remove six screws ⑯ from MAIN BD .
- 8) Separate the MAIN BD .

